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Comeback of Community-based Forest Management: The Need to Revamp Strategies to Promote Decentralized Environmental Governance in India and Brazil

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COMEBACK OF COMMUNITY-BASED FOREST MANAGEMENT: THE NEED TO REVAMP STRATEGIES TO PROMOTE DECENTRALIZED ENVIRONMENTAL GOVERNANCE IN INDIA AND BRAZIL

Naysa Ahuja^A

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INTRODUCTION

The governance of forests and their resources has always been a contentious issue. It has created a divide between developing and developed countries, as well as within them.¹ With the increasing recognition of forests as valuable commodities in the global market, the management of forests in developing countries is becoming a matter of constant concern for ecologists, economists, and politicians.

The 1992 Earth Summit stressed the need to sustainably use and manage forests for the wellbeing of present and future generations.² After more than a decade of negotiations, the “Non-Legally Binding Instrument on All Types of Forests” (NLBI)³ was adopted as a landmark instrument in 2007. The instrument brought global consensus for Sustainable Forest Management (SFM). NLBI aims to influence forest governance through “international cooperation and national action to reduce deforestation, prevent forest degradation, promote sustainable livelihoods and reduce poverty for all forest-dependent peoples.”⁴ Intense negotiations at the Earth Summit followed by drafting of Forest Principles⁵ and Agenda 21⁶ provided a launching pad for the national action plans for SFM. The political pressure due to international climate change negotiations, loss of assets in the form of

1. See Annie Petsonk, *Legal Obligation and Institutions of Developing Countries: Rethinking Approaches to Forest Governance*, in WORLD BANK LEGAL REVIEW VOLUME 3: INTERNATIONAL FINANCIAL INSTITUTIONS AND GLOBAL LEGAL GOVERNANCE 293 (Hassane Cisse et al. eds., 2012), available at <http://siteresources.worldbank.org/INTLAWJUSTICE/Resources/WBLegalReviewVol3.pdf>.

2. See generally United Nations Conference on Environment and Development (Earth Summit), Rio de Janeiro, Braz., June 3-14, 1992, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF. 151/26/ Rev.1 (Vol. I), Annex I (August 12, 1992) available at <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm> [hereinafter Earth Summit]; U.N. Conference on Human Environment (Stockholm Declaration), Stockholm, June 5th-16th, 1972, U.N. Doc.A/CONF.48/14/Rev.1, available at <http://www.un-documents.net/aconf48-14r1.pdf> [hereinafter Stockholm Declaration].

3. United Nations Forum on Forests, Rep. of its 7th Sess., Feb. 24, 2006, and Apr. 16-Apr. 27, 2007, E/CN.18/2007/8, <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N07/349/31/PDF/N0734931.pdf?OpenElement>.

4. *About UNFF*, U.N. FORUM ON FORESTS, <http://www.un.org/esa/forests/about.html> (last visited Sept. 5, 2014).

5. See generally U.N. Conference on Environment and Development, *Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests*, U.N. Doc. A/CONF.151/26 (Vol III), Annex III (August 14, 1992), available at <http://www.un.org/documents/ga/conf151/aconf15126-3annex3.htm> [hereinafter *NLBI*].

6. See generally United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3-14, 1992, *Agenda 21*, ¶11.1 U.N. Doc. A/CONF.151/26 (1992), available at <http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>.

timber and other ecosystem services, and drastic environmental imbalances have also compelled developing countries to use innovative legal, institutional, and public engagement approaches for the management of these vast resources.

Despite this restructuring of forest governance approaches by many countries, its implementation suffers from various flaws. For instance, the rule of law has not been internalized by society or government officials. Thus, much of the international debate on forestry, like NLBI, has emphasized mainstreaming “co-management” and recognized the legitimate role of local communities and forest-dwellers in the decision-making processes that affect forests.⁷

Part I of this article provides an overview of the Participatory Forest Management (PFM) approach in the international context. Part II and III examine environmental governance in the forest sector of two rapidly emerging economies of the world, India and Brazil. Part IV analyzes the two regimes and proposes adoption of favorable practices from one another to supplement their PFM framework through policy recommendations. The discourse focuses on the development of participatory tools for forest governance, pinpointing the key legal instruments, executive actions, institutional arrangements, and public engagement initiatives in the context of the historical, political, and economic backdrop of both countries. The fundamental role of the state and judiciary in inducing regulatory and behavioral coherence among the key actors has been discussed in the light of accountability and transparency by way of background and analysis. The article concludes with recommendations to mitigate existing and future conflicts in the successful implementation of a PFM regime in India.

I. PARTICIPATORY FOREST MANAGEMENT: CHANGING THE NATURE OF RESOURCE OWNERSHIP

Forests are categorized as a “common-pool resource,”⁸ and from time immemorial, forest resources have been central to the lives of many forest-fringe communities and ancient tribes. Approximately 10% of the total forest area worldwide is governed and managed by local communities.⁹ After the nonbinding agreement on Forest Princi-

7. See *NLBI*, *supra* note 5, principle 2(c).

8. Thorkil Casse & Anders Milhøj, *Community Forestry and Forest Conservation: Friends or Strangers?*, 21 ENVTL. POL’Y & GOVERNANCE 83, 84 (2011) (citing Nimai Das, *Incidence of Forest Income on Reduction of Inequality: Evidence from Forest Dependent Households in Milieu of Joint Forest Management*, 69 ECOLOGICAL ECON. 1617 (2010)).

9. *Id.* at 87.

ples, many developing countries have committed to include local communities, forest dwellers, women, and indigenous people in the “development, planning and implementation of the national forest policies.”¹⁰ PFM is one of the mechanisms that seek to meet the dual objectives of forest conservation and shifting traditional rights over forest resources to the forest dependent communities.

PFM essentially refers to co-management of forests by sharing responsibilities and benefits in the process. This is one of the recognized approaches to the sustainable development of “all types of forests and to strengthen long-term political commitment to this end”¹¹ The two crucial entities involved in PFM are the state, which is bound by the local laws and the Constitution to protect and conserve forests, and the local communities, which traditionally depend on forests for their sustenance. Despite the apparent government-community protector-beneficiary relationship that supposes the community to be a beneficiary and the government to be a protector, these roles are frequently reversed. More often than not, the forest communities become the forest guardian while government generates revenues from the timber, carbon credits,¹² and other ecosystem services. Such decentralized management of natural resources has traditionally been a part of the socio-cultural milieu of many countries, such as Indonesia, Kenya, India, and Brazil where a high percentage of population is dependent on forests.

In India, the shift from the traditional community authority over common forest resources to centralized government control was the result of colonial rule.¹³ Indian forests were harvested in large quantities by the British Empire for establishing railways and revenue generation. Similarly, colonial Brazil was exploited for its red hard-

10. See *NLBI*, *supra* note 5, principle 2(d).

11. See Collaborative Partnership on Forests, *Promoting the Sustainable Management of All Types of Forests* (2013), available at http://www.un.org/esa/forests/pdf/session_documents/unff10/CPF-Brochure.pdf.

12. WORKING GROUP III TO THE 4TH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: MITIGATION OF CLIMATE CHANGE 731 (Bert Metz et al. eds., 2007), available at http://www.ipcc.ch/publications_and_data/ar4/wg3/en/contents.html [hereinafter ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE]. In the forestry sector, carbon credits are a form of investment on projects which reduce, avoid, or sequester carbon emissions by afforestation, conservation, or reduction of deforestation. They are stored as carbon stocks on land, in products, and they are bought as carbon offsets where one carbon offset equates a ton of CO₂ removed or avoided from potential release in the atmosphere.

13. N.H. Ravindranath, K.S. Murali & P. Sudha, *Community Forestry Initiatives in Southeast Asia: A Review of Ecological Impacts*, 5 INT'L J. ENV'T & SUSTAINABLE DEV. 1, 2 (2006) [hereinafter *Community Forestry Initiatives*].

wood and other natural resources by the Portuguese, French, and Dutch.¹⁴ The blanket colonial restrictions on local communities to access and use forest resources outlawed traditional management regimes and widened the political gap between forest officials and local communities.¹⁵ Lack of transparency and accountability in the decisions on forest concession by the post-colonial governments and the absence of procedural rights in many environmental laws have played a big role in alienating forest-dependent communities from their traditional forest resources.¹⁶ All of this, along with lack of strict enforcement laws, led to communal conflicts, forest degradation, and illegal deforestation. However, recent international commitments, evidence-based scientific and economic reports, and subsequent legal recognition by the governments of India and Brazil have led to a comeback of the PFM regime. The IPCC report itself recognizes participatory approaches involving traditional forest-dwelling communities as a cost-effective and democratic means to reduce carbon emissions from deforestation.¹⁷ It has the potential to convert the high “opportunity cost of deforested land” in the form of illegally logged timber and encroached land value to alternative long-term livelihoods with equitable benefits within an organized legal framework.¹⁸ Participatory approaches, if developed with due consideration to socio-cultural and economic drivers of the region, can effectively overcome the historical distrust of the communities and establish forest guardian communities around every forest.

II. INDIA COUNTRY PROFILE AND HISTORY OF FOREST GOVERNANCE

India is the largest democracy in the world and is witnessing rapid economic growth in the fields of information technology, real estate, and infrastructure. It has been ranked as the third most preferred country for global Foreign Direct Investment (FDI) destinations and among the most prospective host economies for investment in 2012-14, due to its low-cost Business Process Outsourcing (BPO) services, rich resources, and massive workforce.¹⁹ Three biodiversity hotspots of the

14. *Colony*, BRASIL.GOV.BR, <http://www2.brasil.gov.br/sobre/history/periods> (last visited Sept. 5, 2014).

15. See *Community Forestry Initiatives*, *supra* note 13, at 2.

16. ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 12, at 731.

17. *Id.* at 731.

18. *Id.*

19. *PESTLE Country Analysis Report: India*, MARKETLINE, Sept. 2012, at 13 (on file with author).

world are located in India, accounting for 7 to 8% of the world's species which are imperiled due to overexploitation of resources, over-population, and climate change.²⁰ Rich biodiversity contributes considerably to the ecosystem services, such as food, clean water, climate regulation, disease control, and pollination, as well as to the tourism industry. Apart from these, the Indian economy includes agriculture, to which more than half of the workforce is dedicated.²¹ However, this growth is slowed down by corruption, regional violence, inflation, caste discrimination, ineffective administration, and agricultural infrastructure.²² As a result, the country's growth has been geographically and socially uneven.²³ Such uneven growth has led to grave disparity between the urban middle class and the communities dependent on agriculture and forests. This disparity has resulted in internal political unrest amongst many other problems that have historically been exploited by colonial countries, and later by political and terrorist groups, to cause an internal breakdown of governance, especially in regions rich in forest and natural resources.

Natural resources, not just limited to forest resources, have always been an integral part of the Indian ethos and have been valued in religious texts. Numerous books in ancient India, like *Vedas*, encouraged the notion that nature is a "presiding deity" in need of preservation which gave rise to a concept of cultural landscapes such as sacred groves and temple forests.²⁴ Various fragments of forests, natural vegetation, or specific species of trees continue to be protected from any kind of human interference by local communities due to their medicinal and aesthetic qualities or religious associations.²⁵ In the state of Himachal Pradesh alone, there are 5,000 documented sacred groves, and Maharashtra has documented 1,600 such areas.²⁶ How-

20. *Biodiversity in India: Megadiverse India*, INDIA BIODIVERSITY PORTAL, http://thewesternghats.indiabiodiversity.org/biodiversity_in_india (last visited Sept. 5, 2014).

21. *The World Factbook: India*, CENT. INTELLIGENCE AGENCY, <https://www.cia.gov/library/publications/the-world-factbook/geos/in.html> (last updated June 22, 2014).

22. See MARKETLINE, *supra* note 19, at 13.

23. *Id.* at 13.

24. See generally BM Kumar, *Forestry in Ancient India: Some Literary Evidences of Protective and Productive Aspects*, 12 ASIAN AGRI-HISTORY 299 (2008), available at <http://www.indiaenvironmentportal.org.in/files/Forestry%20in%20ancient%20India.pdf>.

25. Alison A. Ormsby & Shonil A. Bhagwat, *Sacred Forests of India: A Strong Tradition of Community-Based Natural Resource Management*, 37 ENVTL. CONSERV. 320, 320-1 (2010); see also *Sacred Groves of India*, ACTIVEREMEDY, at 1, http://www.activeremedy.org.uk/pages/files/other/Sacred_Groves_of_India.pdf (last visited Sept. 5, 2014) (the northeastern tribes of Garo and Khasi prohibit any anthropogenic interference in their forests, while central Indian tribes called Gonds prohibit disturbing living trees).

26. *Sacred Groves of India*, *supra* note 25, at 3.

ever, the existence of these forest ecosystems is increasingly under threat due to rapid urbanization, development interventions by the government, and the dwindling belief of people in the spirituality of the lands.²⁷ Historically, forests were used extensively as hunting grounds by the Mughal emperors and were thus preserved and looked after. However, by the 17th century, timber had become a valuable commodity in many kingdoms of northern India.²⁸ As a result, many parts of India were subject to rampant deforestation.

The first centralized legal attempt to manage forests in India was made by the British India Government in 1865, which eventually took formal shape as the Indian Forest Act in 1927.²⁹ However, these acts or regulations were mainly directed at commercial interests and revenue generation for the state facilitating the government's control over forests, thereby depriving numerous communities of their traditional rights over forests.³⁰

Shortly after independence, the Indian government introduced the National Forest Policy in 1952, which sought to revise the colonial forest policy. This was, however, an extension of the British policies and did very little for the forest-dependent communities. Furthermore, it introduced subsidies for timber-based industries under the guise of promoting industrial growth, leading to massive felling of trees for commercial purposes. This was vehemently protested by numerous communities, the most famous protest being the *Chipko* movement wherein activists hugged the trees in order to prevent their felling. This misdirected forest policy of independent India reduced many forest-dependent communities that were traditionally stakeholders in the forest produce to the status of agricultural laborers. The tribes and villagers now had to pay for firewood, bamboo, etc. from the forests that belonged to them. A radical political movement, the Naxalite movement, started demanding forest and land rights for the indigenous tribes living in the forests from the government and later grew into a large-scale militant movement to topple the Indian state altogether.

Incidentally, the same region would later become the site of the first experiment in Joint Forest Management (JFM) in India. Under this experiment, also known as the "Arabari model," the profits from

27. *Id.*

28. Chetan Singh, *Forests, Pastoralists and Agrarian Society in Mughal India*, in ENVIRONMENT, DEVELOPMENT AND SOCIETY IN CONTEMPORARY INDIA: AN INTRODUCTION 63 (Archana Prasad ed., 1st ed. 2008).

29. Kulbhushan Balooni, *Participatory Forest Management in India- An Analysis of Policy Trends Amid 'Management Change'*, in POLICY TREND REPORT 2002 88, available at http://enviroscope.iges.or.jp/modules/envirolib/upload/371/attach/07_India.pdf.

30. *Id.* at 89.

the forest produce was shared among the villagers. The model systematically provided villagers with a 25% share in the profits earned from timber, encouraging the participation of village people in forest conservation.

These experiences led the Government of India to introduce a new National Forest Policy in 1988, drastically different from its predecessor of 1952. This policy recognized, for the first time, the traditional rights of the villagers living near the forests and loosened the grip of the state over forest resources. Above all, it hailed the “Arabari Model” of sharing the revenue of forest produce and recommended its replication by all state governments.³¹

A. *Evolution of Joint Forest Management (JFM)*

India owns huge assets in the form of large tracts of land under forest cover which is projected to be about 64 million hectares (19% of the country’s area) and contributes to 1.7% of its GDP.³² Besides being one of the few remaining biodiversity hotspots in the world, these forests serve as homes and sources of livelihood to many indigenous tribes.³³ They depend on the Minor Forest Produce or Non-timber Forest Produce (NTFPs) to derive fodder, firewood, medicinal plants, gums, resins, latex, essential oils, etc., which also contribute to the GDP of the country.³⁴ Although 60% of the NTFPs are consumed locally, NTFP contribute to 50% of the income generated by at least 30% of the rural or forest-dependent population.³⁵ On the other hand, the demands of the extractive industries cause large-scale diversion of forest land. The timber trade, a great source of revenue generation, is government-owned.³⁶ Apart from timber, fuel wood consumption in India contributes to meet 40% of its domestic energy requirements. According to the Food and Agriculture Organization of the United Na-

31. Ajit Kumar Banerjee, *Participatory Forest Management in West Bengal: A Review of Policies and Implementation* 29 (Understanding Livelihood Impacts of Participatory Forest Management Implementation in India and Nepal, Working Paper No. 3, 2004), available at <http://r4d.dfid.gov.uk/pdf/outputs/R8101c.pdf>.

32. *Forest and the Forestry Sector*, U.N. FOOD & AGRIC. ORG. OF THE U.N., <http://www.fao.org/forestry/country/57478/en/ind/> (last updated May 3, 2012).

33. *Indigenous Peoples in India*, INT’L WORK GROUP FOR INDIGENOUS AFFAIRS, <http://www.iwgia.org/regions/asia/india> (last visited Sept. 5, 2014) (there are 461 indigenous tribes in India which are called Scheduled Tribes under the Constitution of India).

34. FAO, *supra* note 32 (almost 50% of the total revenue from the forest sector is generated from sale of NTFPs).

35. *See id.* (around 400 million forest-fringe populations extract NTFPs for sustenance and supplemental income).

36. *See id.*

tions (FAO), this consumption is five times higher than what can be sustainably harvested from the forests, lowering India's per capita availability of forest land in the world.³⁷

The 1980s were a watershed period in India for forest management and saw a paradigm shift in the outlook of policy-makers. Rapid deforestation was prevalent as a result of the state policies that encouraged industrial growth and "accepted virtually no customary rights of the people or private corporations."³⁸ Illegal felling of trees by local communities was also responsible for this in equal measure. Robbed of their traditional rights over the forests, many tribal communities resorted to smuggling timber and other forest produce, which exacerbated the pressure on forests.³⁹ Even though the rate of deforestation has reduced due to several efforts over a few decades, it is nowhere close to fulfilling the target of increasing the forest cover to 33%.⁴⁰ The natural forests of India, on the other hand, are facing an alarming rate of qualitative loss.⁴¹ Therefore, the Ministry of Environment and Forest (MoEF) envisioned engaging communities for strategic, cost-effective, and sustainable improvement of natural forests.

B. Institutional Arrangement under JFM Regime

The culmination of all these policies was the National Forest Policy (NFP) of 1988.⁴² The NFP called for "creating a massive people's movement with the involvement of women to minimize the pressure on forests."⁴³ In addition to targeting the conservation of forests, it emphasized sustainable production of forest resources for the benefit of people living in adjoining areas.⁴⁴ NFP recommended various state governments to implement aspects of JFM in their legislations, so as to

37. *See id.* (India's per capita availability of forest land is 0.08 Hectares as opposed to 0.5 and 0.64 for the average per capita availability in developing countries and the world, respectively).

38. *See Banerjee, supra* note 31, at 17, 21 (in the mid-1980s India lost forest cover at the rate of 47,500 hectares per year).

39. *Id.* at 22.

40. *Forest Policy: Introduction*, MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE (Mar. 24, 2014), <http://envfor.nic.in/division/introduction-10>.

41. *See id.* (average forest Biomass available per capita in the Indian natural forests is 6 ton/ha. compared to an average of 82 ton/ha. in the developing countries).

42. The National Forest Policy, Res. No. 3-1/86-FP of 1988, INDIA CODE (1988), available at <http://envfor.nic.in/sites/default/files/introduction-nfp.pdf>.

43. *See Balooni, supra* note 29, at 94.

44. *Id.*

establish uniform policies across the country.⁴⁵ By 1992, nearly 50% of all the states in India had adopted JFM in some form or another, by involving local communities in the restoration and protection of the forest resources.⁴⁶ For establishing the community-based forest management system NFP identified "Protection Units," constituted from a village or a group of villages in the vicinity of a patch of forested land, which were responsible for protecting the forest. The policy was conveniently flexible, assigning an array of socio-government entities, ranging from a village committee to a government-instituted council to a youth group to a council of village elders (*Panchayat*), to look after a certain forest.⁴⁷ These decision-making forums could constitute their own guidelines for preservation of their forest area as a community.⁴⁸ Furthermore, the policy aims to reward the participating communities for their efforts.⁴⁹

A salient feature in the constitution of such JFM Committees (JFMCs) is the compulsory representation of all sectors of society in the membership.⁵⁰ It is the highest-level formal institution under the three-tier JFM institutional framework within a state (district, block, and village or *Panchayat* level).⁵¹ In addition to officials of the forest department, local NGOs, and *Panchayat* members, a number of states have made it mandatory to provide representation to underprivileged communities and groups, such as lower castes, women, and indigenous peoples.⁵² Such participation from historically underrepresented groups has resulted in a more equitable benefit-sharing within the participating communities.⁵³ There is, however, great variation in the institutional arrangement of JFMCs from state to state, based on their different forest cover and socio-economic conditions. Their powers and functions vary in terms of the flexibility and authority in executive,

45. National Forest Policy, *supra* note 42, at 9-10 (Policy No. 4.15).

46. MANISH TIWARY, PARTICIPATORY FOREST POLICIES AND POLITICS IN INDIA: JOINT FOREST MANAGEMENT INSTITUTIONS IN JHARKHAND AND WEST BENGAL 23 (1st ed. 2004).

47. See CZECH CONROY, LEARNING FROM SELF-INITIATED COMMUNITY FOREST MANAGEMENT GROUPS IN ORISSA: FINAL TECHNICAL REPORT, VOLUME 1 22 (2001), available at <http://r4d.dfid.gov.uk/PDF/Outputs/NatResSys/R6787FTR1.pdf>.

48. *Id.*

49. National Forest Policy, *supra* note 42, at 6 (Policy No. 4.6).

50. See CONROY, *supra* note 47, at 65.

51. APPUKUTTANNAIR DAMODARAN & STEFANIE ENGEL, JOINT FOREST MANAGEMENT IN INDIA: ASSESSMENT OF PERFORMANCE AND EVALUATION OF IMPACTS 27, (2003), available at <http://ageconsearch.umn.edu/bitstream/18752/1/dpdp0077.pdf>.

52. *Id.* at 32 (The state of Andhra Pradesh, for example, requires a compulsory 30% of its representation be women).

53. *Id.* at 16.

administrative, and economic matters from state to state. Broadly, the powers accorded to JFMCs are the following:⁵⁴

- Rights, including trade, over specific forest resources;
- Freedom to formulate rules catering to the local forests;
- Financial powers to take care of the expenses incurred;
- Formulation of executive bodies and the right to vote for them;
- Punitive powers over offenders including monetary fines; and
- Freedom to reconstitute the executive bodies by expulsion of existing members on the grounds of irregularity and indiscipline.

Apart from these powers, the JFMCs partake in benefits from the forest areas under their supervision. There are two ways in which JFMCs receive benefits from the forest resources they manage: “need-based” and “equal” sharing. Need-based sharing is typically implemented in the case of timber, which is required by most households in villages.⁵⁵ The amount of timber each household is entitled to is usually restricted by the forest department. Equal sharing is applied when timber harvesting is performed under government supervision in the managed forests. Communities participating in JFM are entitled to full access/equitable share of non-timber products like flowers, fruits, twigs, straw, and cattle-feed.⁵⁶ In addition, certain states accord up to 50% to the local villagers for the revenue obtained from the sale of timber and in fines collected from convicted smugglers.⁵⁷ Such measures have been adopted in a number of states to encourage the local communities’ participation and to enlist their cooperation in forest protection.⁵⁸

Protection is implemented primarily in the form of patrolling by “watchers.” In certain cases, *Panchayat* members have instituted special funds for the purpose of supporting patrols around their forests. Offenders are typically fined, chastised by village elders (*Panchayat*), and, in extreme cases, handed over to the forest department.⁵⁹ Cus-

54. *Id.* at 8-9.

55. *See* CONROY, *supra* note 47, at 22.

56. *Id.*

57. BHAGIRATH BEHERA, DETERMINANTS OF SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES: THE CASE OF JOINT FOREST MANAGEMENT IN INDIA 30 (2006).

58. This and other statements throughout the article draw on the author’s experiences and observations during her work with Enviro Legal Defence Firm on the review of participatory forest management practices in few states of India.

59. *See* CONROY, *supra* note 47, at 22.

tomary laws of the village play a dominant role in disciplining any acts of forest violation from within the community.⁶⁰

All states in India have now adopted JFM policies with some regional modifications. By the year 2000, the total number of JFMCs all over India had swollen to nearly 63,000.⁶¹ JFM regimes operate in around 61% of the open forests and 24% of the total forests in the country. States with large tribal populations, like Andhra Pradesh, Madhya Pradesh, and West Bengal, have more than 80% of their open forests under JFM.⁶²

Overall, the adoption of JFM was a welcome departure from previous legislation that aimed to make forest resources the exclusive property of the state. There has been a noticeable increase in the forest cover in the country, accompanied by an increase in bio-diversity and a corresponding increase in the variety, quality, and quantity of forest produce available for harvest.⁶³ Communities that depend on forest resources have benefitted from the employment generated from JFM. An additional source of income is the sale of the NTFPs. There are fewer cases of illegal encroachment, smuggling of timber, over-extraction of medicinal plants, etc., due to vigilant protection by the JFMCs. There has been better leadership among the village communities as an indirect consequence of sharing of responsibilities and benefits. Women's empowerment has also been bolstered, albeit to a limited extent in most areas.⁶⁴ Education of village communities has led to better understanding of modern technology and increased usage of environmentally friendly fuel sources such as biomass and bio-gas.⁶⁵ Environmental benefits from JFM include better canopy cover, increase in the water table, increase in soil moisture retention, and a dramatic decrease in soil erosion, leading to better quality of soil.⁶⁶

60. Based on author's experiences and observations. See *supra* note 58.

61. Yogesh D. Jadhav, Implementing Tropical Forest Sustainability Model in Central India (2003), available at http://www.fao.org/docrep/ARTICLE/WFC/XII/0838-C1.htm#P28_106.

62. K.S. Murali et al., *Institutional and Policy Issues of Participatory Forestry: Indian Experience*, 44 TROPICAL ECOLOGY 73, 77 (2003), available at http://www.tropecol.com/pdf/open/PDF_44_1/44108.pdf.

63. Sudha P & Ravindranath N H, *Evolution of Forest Policies and the Spread of Joint Forest Management in India*, in JOINT FOREST MANAGEMENT IN INDIA: SPREAD, PERFORMANCE AND IMPACT 164 (N H Ravindranath & P Sudha eds., 2004) [hereinafter *Evolution of Forest Policies*].

64. N H RAVINDRANATH & P SUDHA, JOINT FOREST MANAGEMENT IN INDIA: SPREAD, PERFORMANCE AND IMPACT 75 & 327 (2004) [hereinafter JOINT FOREST MANAGEMENT IN INDIA].

65. *Id.* at 293, 327.

66. *Id.* at 14.

There has been a visible impact in terms of the restoration of deforested areas. Qualitatively, JFM has managed to enlist the support of entire communities that felt marginalized due to earlier, repressive laws concerning forest resources.⁶⁷

C. Limitations of the JFM regime

Despite all listed achievements, more than two decades after the first directive in favor of JFM was introduced in India, it has not yet reached the level that was envisaged by the policy-makers.

Weak Legal Basis: There are numerous legal issues that need to be resolved as far as JFM is concerned. The regime, in general, failed to operate as a “preemptive” and “preventive” legal tool in the forest governance landscape of India.⁶⁸ Concern exists over the inclusion of the directives stated in the National Forest Policy of 1988 in the eventual revision of the Indian Forest Act of 1927.⁶⁹ Each is essentially at loggerheads with the other, rendering ambiguity over the supremacy of one over the other. The 1990 circular calling for JFM implementation in India is no more than a “direction-setting document” stating the needs and objectives of engaging forest-fringe communities by sharing usufructs from governmental afforestation programs.⁷⁰ The basis of the circular is itself a forest policy which is only “opinion of the House” of Parliament and thus is not legally binding.⁷¹ Hence, acting upon such an opinion is entirely at the discretion of the existing government, not a mandate to entrust long-term management of the forests.

As a corollary, the State JFM resolutions, pursuant to JFM Circular of 1990, lack force of law because these are executive orders without any enabling legislation on forest conservation. Nevertheless, some states, such as Jammu and Kashmir and Uttar Pradesh, have based their JFM program on the State Forest Acts to provide strong legal footing.⁷² This goes a long way in instilling confidence in local people to participate in the JFM program.

Institutional Concerns: JFMCs or Forest Protection Committees, Village Forest Committees (VFCs), and *Van Samrakshshan*

67. FORESTS FOR POVERTY REDUCTION: CHANGING ROLE FOR RESEARCH, DEVELOPMENT AND TRAINING INSTITUTIONS (H.C. Sim, S. Appanah & N. Hooda eds., 2005), available at <http://www.fao.org/docrep/008/af349e/af349e00.htm>.

68. Sanjay Upadhyay, *JFM in India: Some Legal Concerns*, 35 ECON. & POL. WEEKLY 1 (2003).

69. See Murali et al., *supra* note 62, at 78.

70. See Upadhyay, *supra* note 68, at 2.

71. *Id.* (citing SUBHASH KASHYAP, OUR PARLIAMENT, NBT, 108 (1989)).

72. *Id.*

Samitis are some village-level organizations that the JFM regime relies upon for effective management of forest resources.⁷³ However, there is no statutory recognition for JFMCs and VFCs as they are not registered or recognized by any government agency.⁷⁴ These can be summarily dissolved by the government's forest department officials, creating doubts as to their continued existence.⁷⁵ Further, it is unclear as to what status VFCs have in relation to constitutionally recognized village self-governing bodies such as the *Panchayats*.⁷⁶

Accountability of Memorandum of Understanding: Another concern is the nature of agreement between the participating community members and the forest department. In most states the agreement between the JFMC and the forest department is no more than a Memorandum of Understanding (MoU), which dictates the responsibilities of all the stakeholders involved.⁷⁷ The language of such memoranda has been often found to be very equivocal and, in most cases, empowers the forest department.⁷⁸ The JFMCs are overburdened with multiple duties and responsibilities and may be dissolved if their performance is found to be unsatisfactory; however, what exactly constitutes "satisfactory performance of the duties . . . by the committee" is not clearly defined in most cases and is open to interpretation.⁷⁹ Interestingly, there is no mention of the consequences of the states' non-performance of their duties under the MoU, which further expands the scope for unfair administration of the regime. The most serious legal flaw of the JFM directive is the absence of the procedure to seek redress in case of violation of rights of the JFMC members.⁸⁰ In some cases, this has led to exploitation of the village communities by the forest department officials.

Legal Status of JFMCs: In most cases, the forest department has legal rights over the forest lands and, sometimes, the land is leased out to the JFMCs.⁸¹ This creates a complicated legal situation since JFMCs have no legal status, and, hence, leasing land to them becomes difficult.⁸² In practice, JFMCs are registered by the Divisional Forest Officer (DFO), who is not the appropriate authority to register under

73. See Upadhyay, *supra* note 68, at 3.

74. *Id.* at 3.

75. *Id.* at 2, 3.

76. See Murali et al., *supra* note 62, at 78.

77. See Upadhyay, *supra* note 68, at 2.

78. *Id.* at 2.

79. *Id.* at 2.

80. See Upadhyay, *supra* note 68, at 3.

81. See Murali et al., *supra* note 62, at 78.

82. See *id.*

the Indian Registration Act. To resolve this issue, the Central government issued guidelines for the registration of JFMCs under the Societies Registration Act, 1860,⁸³ which is a reflection of government's myopic manner of resolving policy issues.

Conflicts over Forest Land: One of the aims of the 1990 JFM circular is the acquisition and rehabilitation of "degraded lands."⁸⁴ This typically refers to barren land or extensively deforested land. The major challenge lies in the procurement of such lands for restoration. Apart from the ambiguous terms and conditions of the lease, the boundaries of such degraded lands are not clearly demarcated, leading to further confusion. There have been numerous cases wherein the forest lands fall under the purview of multiple villages/hamlets, leading to conflicts between the village communities over lease rights.⁸⁵ At times, such degraded lands are illegally occupied. When the encroachers are themselves tribals, lengthy court battles are often fought over the question of land ownership under JFM scheme and Forest Rights Act.⁸⁶

Finance for Funding JFMs: JFM programs in villages are funded either through community funding, government funding, or a combination of the two. The government of India established the National Bank for Agriculture and Rural Development (NABARD) for the purpose of financing rural, agro-centric projects.⁸⁷ However, the contribution of NABARD towards afforestation activities has been insignificant.⁸⁸ Most states depend extensively on external funding by various international organizations like the World Bank, the U.S. Agency for International Development (USAID), the Danish International Development Agency (DANIDA), etc.⁸⁹ Studies showed that

83. Ministry of Env't & Forests, *Guidelines for Strengthening of Joint Forest Management (JFM) Programme*, Res. No. 22-8/2000-JFM (FPD, Feb. 21, 2000), available at <http://www.pbforests.gov.in/pdfs/policies/JFM%20Guidelines.pdf> [hereinafter *2000 Guidelines for Strengthening JFM*].

84. Ministry of Env't & Forests, *The Circular Concerning Joint Forest Management*, No. 6-21/89-P.P (Jun. 1, 1990), available at <http://ielrc.org/content/e9004.pdf> [hereinafter *JFM Circular*].

85. Gov't of Orissa, Forest & Env't Dept., *Joint Forest Management Resolution, 2008*, No.IF-Affn.17/2008-17454/F&E (Oct. 22, 2008), available at http://www.odisha.gov.in/forest_environment/Forest_resolution/pdf/17454_22.10.08.pdf.

86. See Balooni, *supra* note 29, at 98 (FRA recognizes the rights of indigenous communities to own piece of land they have been historically subsisting up on).

87. The National Bank for Agriculture and Rural Development Act, 1981, No. 61, Acts of Parliament, 1982 (India), available at <http://www.bu.edu/bucflp/files/2012/01/National-Bank-for-Agriculture-and-Rural-Development-Act-No.-61-of-1981.pdf>.

88. See Balooni, *supra* note 29, at 99.

89. See Murali et al., *supra* note 62, at 81.

states that received substantial external aid have performed better than those that have not.⁹⁰

Flaws in Benefit Distribution: The benefit sharing methodology advocated by JFM has also come under considerable criticism for being unfair to the JFMCs. The benefit obtained by the JFMC through sale of timber as well as NTFPs varies between 20% and 100% from state to state.⁹¹ However, there is a clause that dictates that the benefit has to be calculated “minus the operation cost of such harvesting.”⁹² The definition of “operating costs” has been widened in most states to include expenses, such as office maintenance and officials’ salaries, incurred by the JFM office itself. This reduces the overall benefit obtained by village communities to a great extent.⁹³

Furthermore, there is no rule to ensure equity in benefit sharing.⁹⁴ The percentage of benefit shared with the JFMC is often heavily skewed in favor of the forest department. Even in states like Gujarat, Karnataka, and Orissa, where benefit is shared equally between the JFMCs and the forest department, 50% of the JFMCs’ share is used for development of the village and adjoining forest areas.⁹⁵ The rest is shared amongst the JFMC in a manner whose equality is dubious. The forest department does not contribute towards the development funds of the village or forests.⁹⁶ Inherent socio-economic hierarchy at village level causes further inequity in distribution of benefits. The common community fund is often used for purposes that benefit rich, upper class and influential men more than other sections.⁹⁷ It is widely felt that the remuneration paid to local communities for JFM activities is inadequate.⁹⁸

Gender and Marginalized Concerns: Though the JFM circular has progressive gender approach and a number of state governments stipulate a certain percentage of women membership in JFMCs, the participation by women continues to be unsatisfactory. Certain states require both men and women from a household to be part of the gen-

90. *See id.* at 78.

91. *See id.* at 81.

92. *See* Upadhyay, *supra* note 68, at 4.

93. *Id.*

94. *See* Murali et al., *supra* note 62, at 80-81.

95. *See id.* at 81.

96. *See id.*

97. *See* CONROY, *supra* note 47, at 24.

98. *See* DAMODARAN & ENGEL, *supra* note 51, at 15.

eral body.⁹⁹ Even in such cases, the participation by men and women is found to be unequal.¹⁰⁰

Counterintuitively, it is women from poor households who often depend on NTFPs for their daily activities.¹⁰¹ The emphasis placed upon the sale of timber to generate revenues has also been criticized because it does not address the day-to-day fuel needs of poor women.¹⁰² It only caters to the richer sections of the village who can afford replacement to fuel wood for future gains from timber sale.¹⁰³ JFM's assumption of trickle-down benefits for women has not been met in reality.

No Incremental Benefits: Despite formulation of JFM policies, illegal extraction of forest resources is rampant, difficult to monitor, and has the potential to overturn the benefits gained from JFM.¹⁰⁴ Typically, the village communities' participation with government in forest protection scheme falls under three categories: full participation with no extra use, no participation with self-use, and full participation with extra use.¹⁰⁵ While the government expects people to participate fully with no extra use granted to them, communities prefer to participate for benefits or not at all. That the wages given to members of JFMC and workers involved in forest protection is fixed, and not based on their performance, has limited wholehearted participation by forest-fringe communities.¹⁰⁶ The lack of any performance-based incentives demotivates poor village communities who feel their work is not rewarded.¹⁰⁷

Creation of Parallel Power Structures: Village self-governance councils, called *Panchayati Raj* Institutions (PRIs), have been given certain powers pertaining to social forestry and minor forest produce through the 73rd amendment of the Indian Constitution.¹⁰⁸ There is an emerging conflict between the administrative powers of PRIs and JFMCs since there is no clarity as to forestry management functions of

99. See Murali et al., *supra* note 62, at 79-80.

100. *Id.*

101. *Id.* at 80.

102. *Id.*

103. *Id.*

104. Nimai Das & Debnarayan Sarker, *Impact of a moral hazard problem in the Joint Forest Management Programme: A study from forest-dependent households in West Bengal*, 12 J. ECON. POL'Y REFORM 323, 324 (2009).

105. *Id.* at 325.

106. *Id.* at 330.

107. *Id.* at 325.

108. See Upadhyay, *supra* note 68, at 4.

the PRIs which many feel should be limited to monitoring only.¹⁰⁹ There are major legal and administrative decisions where the functions of both PRIs and JFMCs overlap, and this has led to inter-institutional conflicts.¹¹⁰ Similarly, the Forest Rights Act of 2006 (FRA) empowers *Gram Sabha* (village assemblies, consisting of every household) to delineate traditionally accessed forest area and to sustainably manage such Community Forest Resource (CFR).¹¹¹ This duty of *Gram Sabha* (and Forest Protection Committees (FPCs), further constituted by *Gram Sabha*) comes in conflict with the duties of the JFMCs and creates implementation overlap at the forest area.¹¹² Moreover, the traditional forest rights of indigenous and other forest dwelling communities recognized under FRA may come in conflict with the JFM benefits or rights of the JFMCs engaged in existing forest management practices.¹¹³

After the National Forest Policy of 1988 and the JFM Circular of 1990,¹¹⁴ there have been a number of guidelines and directives passed by the central government that have sought to rectify some of the shortcomings of these two policies. Many of the drawbacks of the 1990 directive on JFM were remedied in the February 2000 guideline issued by the government of India.¹¹⁵ A number of positive steps were taken regarding status of FPCs. By law, they are required to be registered under the Societies Registration Act¹¹⁶ with compulsory membership of every adult in a particular village. The names of FPCs were required to be uniform in all states as JFMCs, providing these committees with a legal status.¹¹⁷ In order to ensure greater participation by women, the guidelines of February 2000 made it mandatory for all general bodies of JFMCs to have 50% female membership.¹¹⁸ Fur-

109. Pankaj Lal & Panchayati Raj, *Institutions and Joint Forest Management Committees: Forging Linkages – Part 2*, INFORM, Jan. 2007, at 5, 7 (author records various conflicts between PRIs and JFMCs in many states of India where JFM is working).

110. See Upadhyay, *supra* note 68, at 4.

111. The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, § 2(a), No. 2 of 2007, available at <http://www.ielrc.org/content/e0618.pdf> [hereinafter F.R.A.].

112. ENVIRO LEGAL DEFENCE FIRM, SYNERGIZING THE CONSERVATION REGIME IN FOREST RIGHTS ACT WITH THE EXISTING PARTICIPATORY FOREST MANAGEMENT SYSTEM: POLICY NOTE 4 (Sept. 2010).

113. *Id.* at 5.

114. *JFM Circular*, *supra* note 84.

115. *2000 Guidelines for Strengthening JFM*, *supra* note 83.

116. The Societies Registration Act, Act no. 21 of 1860 (India), available at <http://www.bu.edu/bucflp/files/2012/01/Societies-Registration-Act-No.-21.pdf>.

117. *2000 Guidelines for Strengthening JFM*, *supra* note 83.

118. *Id.*

ther, the executive bodies were to have a minimum of one-third female membership with at least one woman as an office bearer.¹¹⁹ The quorum for holding a general body meeting was raised to 50% female members.¹²⁰

The guideline established clear-cut rules for the sharing of timber revenue in degraded and non-degraded forests.¹²¹ Further, the boundary demarcation for different forest areas with respect to surrounding villages was resolved on the basis of a uniform measurement, thereby solving many of the inter-village conflicts arising because of the lack of a clear boundary.¹²² The guideline sought to make use of local knowledge to strengthen local institutions. Most importantly, the guidelines called for the establishment of state-level representative forums and working groups to resolve conflicts arising out of JFM related issues.¹²³ Self-initiated groups which were hitherto left outside the gambit of JFM were asked to be provided with recognition after evaluating their performance.¹²⁴

The guideline laid down mechanisms for ensuring transparency in revenue generated from the sale of forest produce.¹²⁵ It has set a minimum share of 25% for the village communities and has directed the forest department to make a similar monetary contribution towards the forest development funds, thereby ending the inequity between the forest department and the JFMCs.¹²⁶ Now, the guideline calls for supervision and monitoring of progress at intervals of three to five years at district and state levels.¹²⁷

Another set of guidelines was issued in December 2002, which called for treating the JFMCs as “basic forest management units” on signing of a MoU with the forest department.¹²⁸ It also recommends giving far reaching monetary powers to JFMCs so they can provide incentives to all stakeholders.¹²⁹

119. *Id.*

120. See DAMODARAN & ENGEL, *supra* note 51, at 15.

121. 2000 *Guidelines for Strengthening JFM*, *supra* note 83.

122. *Id.*

123. See DAMODARAN & ENGEL, *supra* note 51, at 15.

124. *Id.* at 20.

125. 2000 *Guidelines for Strengthening JFM*, *supra* note 83.

126. See DAMODARAN & ENGEL, *supra* note 51, at 20.

127. *Id.* at 21.

128. Ministry of Env't & Forests, *Strengthening of Joint Forest Management (JFM) Programme*, Res. No.22-8/2000-JFM (FPD Dec. 24, 2002), available at <http://www.ielrc.org/content/e0225.pdf>.

129. *Id.*

The government of India has also introduced certain initiatives at the highest level, which aim to aid the JFM movement at the grass root level. The first step was the creation of a JFM monitoring cell under the Ministry of Environment and Forests (MoEF).¹³⁰ It is the responsibility of these cells to collect relevant information about the progress of JFM related activities, so that the data can be analyzed in order to form future policy.¹³¹ Additionally, a multi-stakeholder JFM network was also created at the national level for providing feedback to the policy makers from all relevant perspective.¹³² Establishment of such monitoring and consultation institutions at the national level in itself is not sufficient in the absence of strong adherence to the rule of law. It is difficult to say that the procedural rights of the JFM communities can be duly respected in the absence of substantive legal basis of their partnership with the government institutions. The information generated and data collected by the new institutions can be biased, and the decisions made by officials can easily surpass the due process of law.

D. Role of Indian Judiciary & Access to Justice

The Supreme Court of India is the highest court in the judicial structure, while each state has its own High Court. Further, each district has a District Court. Starting from its involvement at the Stockholm Conference,¹³³ the Indian judiciary has played a vital role in the protection of environment, forests, and wildlife. Judicial activism and public interest litigation (PIL) have made a valuable contribution in advancing the rule of law and enhancing public access to justice, especially the Green Bench of the Supreme Court of India, which has the jurisdiction to entertain PIL on environmental matters.¹³⁴ In case of a fundamental rights infringement by the State,

130. Ministry of Env't & Forests, Joint Forest Management: A Decade of Partnership, (2002), Joint Forest Monitoring Cell, Ministry of Env't & Forests, Government of India.

131. *Id.*

132. See DAMODARAN & ENGEL, *supra* note 51, at 22.

133. See generally U.N. Conference on Human Environment (Stockholm Conference), Stockholm, June 5-16, 1972, U.N. Doc.A/CONF.48/14/Rev.1 (Nov. 1973), available at <http://www.un-documents.net/aconf48-14r1.pdf> (judges from India participated in this conference to ameliorate the role of judiciary in environmental justice).

134. Jacob Werksman, *Forward* to GEORGE PRING & CATHERINE PRING, THE ACCESS INITIATIVE, GREENING JUSTICE: CREATING AND IMPROVING ENVIRONMENTAL COURTS AND TRIBUNALS v-vi (WRI 2009) (ART 32 and 226 empower Supreme Court and High Court of India respectively to issue orders to protect any individual from violation of any fundamental right).

including procedural rights,¹³⁵ the Court has the power to take up a matter *suo moto* (or *sua sponte*).

Judicial intervention, however, in the arena of JFM has not yet emerged. The possible reason for this is relatively lower economic stakes in the PFM disputes.¹³⁶ The role of the judiciary in expanding the scope of petitions is evident from the establishment of Centrally Empowered Committee (CEC), the first national level, quasi-judicial body to deal with forestry matters.¹³⁷ It was constituted under the Supreme Court's judicial order in the on-going *Godavarman* Case.¹³⁸ It has been created under the Environmental Protection Act and is tasked with the authority to monitor the implementation of the court orders, investigate, and bring the cases of non-compliance before the court.¹³⁹ It has the power to decide and formulate its own procedures to speedily deal with the cases of non-compliance.¹⁴⁰ The recommendations of CEC substantially shape policy decisions in forestry. This includes establishment of Compensatory Afforestation Fund (CAF) and Compensatory Afforestation Fund Management and Planning Authority (CAMPA), and their modalities.¹⁴¹ The judiciary has gone beyond its role of dispute-resolution body to a guiding body for new policy and clearer forest terminology such as more inclusive definition of forest produce, which have a direct implication upon the JFM regime.¹⁴² Furthermore, in 2010 legislation was passed to set up a specialized environmental tribunal called the National Green Tribunal (NGT), for effective and expeditious disposal of environmental matters.¹⁴³ This includes cases on "enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property"¹⁴⁴ Non-recognition of the legal status of JFMCs and MoUs poses a big impediment to access justice at NGT.

135. INDIA CONST. art 14 (article 14 requires the observance of principles of natural justice in delivering justice to public).

136. SANJAY UPADHYAY & APOORVA MISHRA, *ENVIRO LEGAL DEFENCE FIRM, THE ROLE OF JUDICIARY-INFLUENCING FORESTRY PRACTICES AND POLICIES IN INDIA- IMPLICATIONS ON PARTICIPATORY FORESTRY MANAGEMENT* 4 (2006).

137. *Id.* at 6.

138. *T.N. Godavarman v. Union of India*, W.P. (C) 202 of 1995 (India).

139. UPADHYAY & MISHRA, *supra* note 136, at 20.

140. *Id.* at 20.

141. *Id.* at 5, 17.

142. *Id.* at 25-26.

143. The National Green Tribunal Act, No. 19 of 2010, INDIA CODE (2010), *available at* <http://indiacode.nic.in/>.

144. *Id.*

III. BRAZIL COUNTRY PROFILE AND HISTORY OF FOREST GOVERNANCE

Brazil shares many similar geo-political and economic characteristics with India. It is the fifth largest country in the world and has a population of about 190 million.¹⁴⁵ It is experiencing a period of fast economic growth and is ranked as the seventh largest economy in the world in 2010.¹⁴⁶ It is a mega biodiversity region with the largest area of tropical forest in the world,¹⁴⁷ a home to one-fourth of the world's plant species and 6% of the world's endangered species.¹⁴⁸ Apart from the well-known Amazon Basin which covers more than 300 million hectares,¹⁴⁹ the Atlantic Forest in Southern Brazil covered an area of around 130 million hectares.¹⁵⁰ These carbon sinks and rich biodiversity hotspots have been facing high rate of fragmentation and forest deforestation.¹⁵¹ In 2005, it was estimated to be left with only 12% of its original forest cover.¹⁵² Over three centuries of colonial resource exploitation by the Portuguese and economic growth from commodity-exporting policies of the patrimonial governance, Brazil's picture perfect landscape has wrinkled.¹⁵³ Deforestation had further crept into the remote areas of Amazons due to rapid industrialization and urbanization.¹⁵⁴

For a long time, global trade incentives and political instability in Brazil showed a blind eye to the world's most diverse tracts of forestlands.¹⁵⁵ The expansion of sugar cultivation, Brazilian wood and mineral extraction, clearing of land for cattle ranching, rubber, and coffee plantations for export has contributed to local employment and income.¹⁵⁶ At the same time this has added to the plight of forest dwell-

145. Nicholas S. Bryner, *Brazil's Green Court: Environmental Law in the Superior Tribunal De Justica (High Court of Brazil)*, 29 PACE ENVTL. L. REV. 470, 470 (2012).

146. *Id.*

147. *Forest and the Forestry Sector*, *supra* note 32.

148. *See* Bryner, *supra* note 145, at 470.

149. *Forest and the Forestry Sector*, *supra* note 32.

150. Carlos Alberto B. Mesquita et al., *COOPLANTAR: A Brazilian Initiative to Integrate Forest Restoration with Job and Income Generation in Rural Areas*, 28 ECOLOGICAL RESTORATION 199 (2010).

151. Stephen G. Perz et al., *Road Networks and Forest Fragmentation in the Amazon: Explanations for Local Differences with Implications for Conservation and Development*, 7 J. LATIN GEOGRAPHY 1 (2008).

152. Bryner, *supra* note 145, at 470.

153. *History – Periods*, PORTAL BRASIL, <http://archive.today/eSoD> (last visited Sept. 6, 2014).

154. Bryner, *supra* note 145, at 470.

155. *See History – Periods*, *supra* note 153.

156. *Id.*

ers. Out of all the extractive industries, timber industry by far has been the biggest cause for resource consumption in Brazil.¹⁵⁷ The Amazon region is known for its wood extractive industry, and around 85% of its forest production is consumed to supply tropical hardwoods like Mahogany¹⁵⁸ and Sawnwood for the domestic market.¹⁵⁹ The forest sector contributes to 6.9% of Brazil's total GDP.¹⁶⁰ At the same time, 75% of the greenhouse gas (GHG) emissions from Brazil are estimated to be caused by deforestation,¹⁶¹ requiring an immediate national governance strategy for stronger legal and executive action to prevent further loss.

A. *Evolution of Participatory Forest Management (PFM) in Brazil*

Like India, the institutional barriers to the Amazonian rainforest's conservation emerge from misguided forest policies, administrative irregularities, and disoriented political power structure in the governance of important ecological affairs.¹⁶² Before 1965, the laws in place provided protection to potential extractors of natural resources.¹⁶³ Brazil's forest code,¹⁶⁴ *Código Florestal*, and the eventual inclusion of a new chapter on environmental principles in the Brazilian

157. *Brazil – The Forestry Industry*, BRAZIL.ORG, <http://www.brazil.org.za/the-forestry-industry.html#U-04aeZdX2B> (last visited Sept. 6, 2014).

158. *Brazil Ends Mahogany Ban, Sets New Rules*, ECOAMÉRICAS (JULY 2003) available at <http://www.ecoamericas.com/en/story.aspx?id=452> (in 2001, the felling of Mahogany has been banned for a period of two year by Brazil's Environmental-Enforcement Agency (IBAMA). New restrictive rules, Measure No. 4722 permits harvesting of Mahogany for private-landowners limited to only 20% of total land).

159. Peter May, *Forest Certification in Brazil*, in CONFRONTING SUSTAINABILITY: FOREST CERTIFICATION IN DEVELOPING AND TRANSITIONING COUNTRIES 337, 343 n.9 (Benjamin Cashore et al. eds., 2006), available at http://environment.research.yale.edu/documents/downloads/0-9/15_Brazil.pdf.

160. *Forest and the Forestry Sector*, *supra* note 32 (statistics based on 2003 report).

161. Rafael D.B. Figueiredo, *Brazil's Forestry Plan Gains Momentum after Poznan*, 11 ABA INT'L ENVTL. L. COMMITTEE NEWSL. 17, 17 (2009), available at http://apps.americanbar.org/environ/committees/intenviron/newsletter/feb09/IELC_Feb09.pdf.

162. *Id.* at 19.

163. Antonio de Aguiar Patriota, *Rainforests and Regulation: New Directions in Brazilian Environmental Law and Legal Institutions: An Introduction to Brazilian Environmental Law*, 40 GEO. WASH. INT'L L. REV. 611 (2009).

164. CÓDIGO FLORESTAL [C.FLOR], Lei No. 4,771, de 15 Setembro de 1965, DIÁRIO OFICIAL DA UNIAO [D.O.U.] (Braz.), available at <http://www2.camara.leg.br/legin/fed/lei/1960-1969/lei-4771-15-setembro-1965-369026-norma-pl.html>; repealed by Lei No. 12.651 de 25.05.2012 (Braz.), available at http://www.planalto.gov.br/ccivil_03/_ato2011-2014/2012/lei/12651.htm. [hereinafter C.FLOR].

Constitution¹⁶⁵ emphasized Brazil's commitment that citizens enjoy "a right to an ecologically balanced environment" as well as have a joint duty with the government "to defend and preserve [the environment] for present and future generations."¹⁶⁶ It declares forests as "goods of common interest"¹⁶⁷ and allows its usage only on executive review of plans.¹⁶⁸ The *Código Florestal* mandates that landowners maintain a *reserve legal* (Legal Forest Reserve, 80% of landholding for forest reserve) and *áreas de preservação permanente* (areas of permanent protection) in riparian and hilltop zones.¹⁶⁹ This regulation has been ineffective in producing results. Compliance with these forest protection laws turned out to be difficult to achieve due to complicated administrative procedures, a weak legal system, non-deterrent sanctions for noncompliance, at *Instituto Brasileiro do Meio Ambiente E Dos Recursos Naturais Renováveis* (IBAMA), and subsidies unfavorable for SFM.¹⁷⁰ IBAMA, like MoEF, has also put in place a policing structure for the protection of the Amazon forest through conservation bodies, and demarcation of protected forest areas.¹⁷¹ However, the government lacks the technical expertise and sufficient funds to ensure adequate implementation and enforcement.¹⁷²

Under the Constitution ratified in 1988, the federal government legislates only general rules, while the states, counties, and specialized agencies are delegated the function of specific rule-making.¹⁷³ The states and federally funded institutions are responsible for monitoring the forest cover, but these allocated funds are not efficiently utilized.¹⁷⁴ A portion of share in revenues in local-level projects is taken by the National Congress of Brazil for delegating its authority, while the federal subsidies for development of the iron industry (and earlier cattle

165. CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 225 (Braz.), Chapter VI, de 25 Mayo de 1988 (English translation available at <http://pdpa.georgetown.edu/Constitutions/Brazil/english96.html>)

166. See Bryner, *supra* note 145, at 474 (citing C.F., art 225 (Braz.)).

167. See C.Flor arts. 1, 2, 16.

168. Sofia R. Hirakuri, FOREST LAW ENFORCEMENT GOVERNANCE AND TRADE, CAN LAW SAVE THE FOREST? LESSONS FROM FINLAND AND BRAZIL 3 (2003), available at http://www.cifor.org/publications/pdf_files/books/law.pdf.

169. Lesley K. McAllister, *Sustainable Consumption Governance in the Amazon*, 38 ENVTL. L. REP. NEWS & ANALYSIS 10873, 10877 (2008).

170. See Hirakuri, *supra* note 168, at 16.

171. Jacqueline Klosek, *The Destruction of the Brazilian Amazon: An International Problem*, 6 CARDOZO J. INT'L & COMP. L. 119, 138 (1998).

172. *Id.*

173. Emilio F. Moran, *The Law, Politics, and Economics of Amazonian Deforestation*, 1 IND. J. GLOBAL LEG. STUD. 397, 399 (1994).

174. *Id.* at 400.

ranching industry) contributed greatly to converting taxpayers' money in Brazil to large scale deforestation projects.¹⁷⁵ Such discriminatory laws and policies to protect forest in its pristine form have led to wide spread violence and violation of the rights of native tribes in the struggle for forest land acquisition.¹⁷⁶ The indigenous population has been forced to go "extinct or integrate"¹⁷⁷ with modern civilization, causing a loss of cultural diversity and a tremendous amount of traditional knowledge on the sustainable use of forest genetic resources.

Public Forests Management Law¹⁷⁸ attempts to remedy such conflicts. It intends to sustainably protect forests of the federal, state, and local governments by including three management mechanisms: conservation units (national parks), community forest use areas (forest settlements), and forest concession/allowance contracts.¹⁷⁹ It also establishes an independent agency, the Brazilian Forest Service¹⁸⁰ which regulates the administrative and financial management of public forests.

The *Fundo Amazonia* (Amazon Fund) was also created as part of its National Climate Change Plan (NCCP) for raising financial resources to incentivize national efforts to reduce deforestation through economic adaptation, sustainable forest management, and improved land use practices.¹⁸¹ Brazil's NCCP, in line with participatory approach to forestry, explicitly favors inclusion of interested stakeholders, like indigenous communities, civil society groups, and private actors in developing national afforestation strategies and further incentivizing their efforts.

B. Institutional Arrangements and Implementation of PFM

Under *Lei da Política Nacional do Meio Ambiente* (LPNMA) (the National Environmental Policy Act),¹⁸² the National Environmental Management System (SISNAMA), a strong regulatory system,

175. *Id.* at 402-3.

176. See Klosek, *supra* note 171, at 135.

177. *Id.*

178. Lei No. 11.284, de 3 de Marco de 2006, DIARIO OFICIAL DA UNIAO [D.O.U.] de 03.03.2006 (Braz.).

179. See Patriota, *supra* note 163, at 615.

180. See Decreto No. 5,776 de 12 de Mayo de 2006, DIARIO OFICIAL DA UNIAO [D.O.U.] de 15.05.2006 (Braz.).

181. *Id.* at 18.

182. Lei da Política Nacional do Meio Ambiente, Lei No. 6.938, de 31 de Agosto de 1981, DIARIO OFICIAL DA UNIAO [D.O.U.] (Braz.), available at <http://faolex.fao.org/docs/texts/12932POR.doc>.

implements forest policies at a federal, state, and municipal level.¹⁸³ This three tier structure is similar to India's JFM's Central, State, and *Panchayat* level structure. Despite the limited budgets for enforcement, IBAMA's regulatory powers to fill the legislative gaps through administrative rule-making, instructions, and other resolutions play a crucial role in "activating" Constitutional law.¹⁸⁴ However, the administrative acts of IBAMA lack the certainty and can be overturned by judicial or legislative action which makes the forest related regulations easier to flout.¹⁸⁵ The institutional framework also suffers from low coordination capacity between Brazil's prosecutors and state environmental agencies due to overlapping jurisdictions.

SFM in Brazil evolved into different participatory regimes in different locations, depending upon the dominant actors. Given the legal, social, economic, and environmental issues linked with Brazil's deforestation, "Locally Adapted Participatory Sustainable Forest Management" (LapSFM)¹⁸⁶ effectively reduces rural poverty and deforestation through a decentralized approach. It is pertinent that LapSFM must engage the communities at the lowest rung of this participatory approach who are directly affected by creation of alternative use of natural resources. Despite the Forest Code mandating intervention in forest areas to be conducted on the basis of approved management plans, illegal logging practices are the norm in Brazil.¹⁸⁷

Brazil's "Cooperative of Reforestation Workers" (known as COOPLANTAR) was established to integrate Atlantic forest restoration plans with rural livelihood generation in the Monte Pascoal-Pau Brasil Ecological Corridor (MPPBEC).¹⁸⁸ The cooperative specializes in Atlantic forest restoration, a region which has lost over 85% of its natural forest cover, and strives to establish an "ecological corridor" between the protected forest areas and generate incomes for local communities in areas of rich biodiversity.¹⁸⁹ This cooperative is based on the model agreement of 1991, between the Brazilian government and

183. See Hirakuri, *supra* note 168, at 19.

184. *Id.* at 14.

185. *Id.*

186. Andre Eduardo Biscaia de Lacerda et al., *Sustainable Forest Management in Rural Southern Brazil: Exploring Participatory Forest Management Planning*, in SUSTAINABLE FOREST MANAGEMENT – CASE STUDIES 97-8 (Jorge Martin-Garcia & Julio Javier Diez eds., 2012), available at http://cdn.intechopen.com/pdfs/35232/InTech-Sustainable_forest_management_in_rural_southern_brazil_exploring_participatory_forest_management_planning.pdf.

187. *Id.* at 99.

188. See Mesquita, *supra* note 150, at 199.

189. *Id.*

the Pataxó Indian Communities living in the park, wherein the park was converted into Barra Velha Indian Land for SFM. The MPPBEC contract is, however between the company and the communities. Local communities joined hands with corporations to restore the ecological condition of the two national parks threatened by extensive cattle farming and cash crop cultivation, including the water quality which adversely affected fish. The project serves a dual purpose of empowering the local Indian communities by engaging them in environmental and political decision making while simultaneously creating income generation opportunities. This has introduced a “formal employment relationship” to the Indian communities.¹⁹⁰

Based on the concept of local participation, the community members play an active and direct role in the selection of areas to be reforested, planting of native trees, and establishing of “Permanent Preservation Areas” to improve the riparian zones in the basin. It assured local communities that such restoration-based alternative livelihood opportunities are feasible and impactful. The noted good practice in this project was the community members established themselves into a Cooperative. They also partnered with private organizations like the Nature Conservancy and *Instituto Bio Atlantica* to gain technical knowledge, information, and cooperative management techniques to meet their goals. Interestingly, the state environmental agencies like IBAMA were not consulted, and its absence posed questions as to quality and efficiency of the restoration task. But this cooperative-private partnership resulted in meeting of forest restoration targets as well as generation of income for the local community.¹⁹¹

Even though the contract is legally enforceable, sustainable income of COOPLANTAR was solely dependent upon a single contractual project.¹⁹² The price negotiated under the forest contract was not sufficient to fulfill all the operational requirements, and this resulted in non-conformity to the Forest Stewardship Certification (FSC) Standards. Other shortcomings identified were the lack of confidence in the cooperative members and lack of qualified personnel to carry out administrative work. However, it is debatable that the absence of the state in the overall supervision and assistance in the management of incentive-driven collaboration, like in India, could help protect the rights of both parties.

190. *Id.* at 202.

191. *Id.* at 203.

192. *Id.* at 204.

The cooperative leaders now participate in the Brazilian Forest Dialogue forum to voice their community's viewpoint while getting hired by more companies for reforestation projects to connect fragmented forest areas.¹⁹³ This constantly evolving PFM regime has provided a stable source of income for the community members on comparing with the uncertain and legally questionable model of JFM in India.

Programa Bolsa Floresta (PBF), or the Forest Conservation Grant Fund, on the other hand, is a state-level, reward-based scheme to encourage the participation of indigenous communities to avoid deforestation in the reserved forest area of 17,000,000 ha.¹⁹⁴ The program is institutionalized jointly by the state policy on climate change¹⁹⁵ and the state System for Protected Area which created *Fundação Amazonas Sustentável* (FAS or Amazonas Sustainable Foundation)¹⁹⁶ and the PBF fund with the contribution from Amazonas government and Bradesco (Private Bank) to financially compensate the indigenous communities and associations which participate in the scheme as forest stewards.¹⁹⁷ The key objective of the program is to promote forest conservation, reduce poverty, and mitigate climate change in the "deep Amazon."¹⁹⁸ The families or associations have to undergo a two day training program on sustainable land use management and must make a "zero deforestation commitment" to be eligible for the grant program and receive up to 4000 Reais (2500 U.S. dollars) per year to incentivize their sustainable forest management initiatives.¹⁹⁹

PBF emphasizes the enhancement of livelihood opportunities and gender inclusion, as compensation given to families is paid to fe-

193. *Id.* at 205.

194. *The Forest Conservation Grant Fund (Bolsa Floresta)*, FOREST CARBON PORTAL, <http://www.forestcarbonportal.com/project/forest-conservation-grant-fund-bolsa-floresta> (last visited Sept. 5, 2013).

195. Lei No. 3.135, de 5 Junho 2007, DIÁRIO OFICIAL DA ESTADO DO AMAZONAS [D.O.E.A.], de 05.06.2007 (Braz.), available at <http://www.sefaz.am.gov.br/Areas/OpcaoSistemas/SILT/Normas/Legisla%E7%E3o%20Estadual/Lei%20Estadual/Ano%202007/Arquivo/LE%203135%2007.htm>.

196. Virgilio M. Viana, *Bolsa Floresta (Forest Conservation Allowance): An Innovative Mechanism to Promote Health in Traditional Communities in the Amazon*, 22 ESTUDOS AVANÇADOS 143, 145 (2008), available at http://www.scielo.br/pdf/ea/v22n64/en_a09v2264.pdf.

197. See FOREST CARBON PORTAL, *supra* note 194.

198. See Viana, *supra* note 196, at 150.

199. See FOREST CARBON PORTAL, *supra* note 194.

male members of the indigenous communities.²⁰⁰ The community or the family could also be penalized if they cause deforestation beyond allowable limits.²⁰¹ This enforcement is possible because PBF's basis is an agreement entered between FAS and indigenous population as forest guards, clearly defining the commitments of both parties.²⁰² The current obstacles to the efficient implementation of the program are the low level of incentives, uncertain contract duration, and the low threshold for performance-based payment.²⁰³ Another challenge in this participatory approach is that of "coordination flaws" between many institutions involved, which is a recurrent theme in all environmental management programs in Latin America.²⁰⁴ It may add to confidence of communities if the scheme offers a redress mechanism in case grievances against insufficient payments.

The Rural Property Environmental Licensing System (SLAPR) was a licensing program initiated by the environmental agency of the state of Mato Grosso for tracing illegal forest clearing activities in specific rural regions through satellite data.²⁰⁵ SLAPR disclosed large illegal clearings in the state and resulted in a drastically reduced rate of deforestation in 2000. This licensing program's model can be used to license native forest management projects. A permit can be issued to native communities to exercise their traditional forest rights within the prescribed limits and stipulations for a specific period of time under general monitoring by state agencies. This permit is similar to India's community resource rights certificate or *patta* or *nistar patrak* issued to indigenous communities under FRA²⁰⁶ which confers rights of ownership and access to collect, use, and dispose of NTFPs traditionally collected within or outside the village boundary.

C. Role of Judiciary and Access to Justice

It is noteworthy that such participatory schemes based on REDD+ commitments that aim to sequester carbon and contribute to

200. Sheila Wertz-Kanounnikoff et al., *Reducing Forest Emissions in the Amazon Basin: A Review of Drivers of Land-use Change and How Payments for Environmental Services (PES) Schemes Can Affect Them* 11-13 (CIFOR, Working Paper No. 40, 2008), available at http://www.cifor.org/publications/pdf_files/WPapers/WP40Wertz-Kanounnikoff.pdf.

201. *Id.* at 11.

202. See Viana, *supra* note 196.

203. See Wertz-Kanounnikoff et al., *supra* note 200, at 11.

204. See Viana, *supra* note 196 (citing ONU. Comissão Econômica para a América Latina e o Caribe. Santiago: Cepal, 2007 ECLAC 2007).

205. See McAllister, *supra* note 169, at 10877.

206. F.R.A. § 3(1)(b).

rural livelihoods, strongly depend on robust functioning of government institutions, accountability tools, and effective law enforcement.²⁰⁷ Forest governance in Brazil has been feeble, and thus, 80% of deforestation in the Brazilian Amazon is found to be illegal. In such circumstances the accountability tools available to oversight actors like IBAMA and civil societies can check the ineffective implementation of the law or the unsustainable management of forest lands through timely judicial action.²⁰⁸ Crucial measures to strengthen the institutional capacity for effective implementation and policing through sufficient manpower, vehicles, mapping, and tracking systems²⁰⁹ like permits or tools like Global Forest Watch need to be supported by enforcement through impartial specialized tribunals and the judicial system.

The Brazilian Constitution authorizes *Ministerio P'blico* (Public Prosecutor) at both federal and state level to engage themselves in civil actions "to protect public and social property, the environment and . . . collective interests."²¹⁰ Since they are independent of any of the government branches, they have filled a significant gap in the enforcement of environmental law against government agencies and private parties.²¹¹ On the other hand, *Superior Tribunal De Justiça* (High Court of Brazil, STJ) was constituted by the 1988 Brazilian Constitution to assist *Supremo Tribunal Federal* (Supreme Federal Court, STF) in reaching expeditious and effective judicial resolutions. Brazil's Public Civil Action Act of 1985, though not limited to environmental matters, provides a cause of action for the public prosecutor and Civil Society Environmental Organizations to sue for injunctive relief and damages in case of any violation of environmental right ensured under the existing laws.²¹² This enables both public and prosecutors to compel the private parties and government to comply with existing environmental laws and other commitments made under the PFM regime.

207. FLORENCE DAVIET, USING ACCOUNTABILITY: WHY REDD+ NEEDS TO BE MORE THAN AN ECONOMIC INCENTIVE 2 (2014), available at http://www.wri.org/sites/default/files/WRI14_IssueBrief_REDD.pdf.

208. *Id.* at 6.

209. See Wertz-Kanounnikoff et al., *supra* note 200, at 17.

210. FEDERAL CONSTITUTION 1988, art. 129 (Braz.).

211. Bryner, *supra* note 145, at 470.

212. *Id.* (citing Law No. 7.347, 24 July 1985 (Braz.)).

IV. PROPOSALS FOR REFORM: EXCHANGE OF FAVORABLE PRACTICES

Implementation of forest management laws and plans is location-specific and varies not only between nations but also within nations. Due to such regionally entrenched practices of forest management, it is difficult to replicate the practices from another country. Having explored the PFM regimes in India and Brazil within their respective environmental governance systems, there are few common features that have been identified that allow the exchange of legal and implementation ideas. India and Brazil share not only the common history of forest resource exploitation and feeble procedural rights framework under the state rule, but also continue to face the increasing threat of extinction of many indigenous and traditional communities due to forest resource depletion. This part of the paper attempts to learn lessons from the PFM regimes of both the countries. Using the best PFM practices of one country to remedy the shortcoming of another, the objective of forest conservation and sustainable use of forest resources can be achieved without undue exclusion of the indigenous and traditional communities.

India's JFM is a robust and sustainable PFM regime which uses an incentive-driven approach to forest conservation and economic development of the forest-fringe communities. It has been successful in creating communities as forest custodians by identifying their forest rights and encouraging public participation in forest-related decision making processes. Thus, it progressively attempts to incorporate the Principle 10 and 13 of the Stockholm Declaration on ground. The compliance rate with forestry laws is on the positive side as JFM focuses on forest expansion to promote holistic management of forest tracts by inclusion of forest-dependent communities. This has been possible due to a gamut of exemplary laws on Forest Rights and village-level self-governance laws like Panchayat Extension to Scheduled Areas Act (PESA).

In contrast, the Brazilian forest management regime is "chaotic."²¹³ There are many reasons that contribute to noncompliance with the Forest Code at the legislative and administrative levels. Brazil's incentive-based participatory approach has potential to mitigate the noncompliance to great extent by supporting the pro-economic interest stance of the government. Their focus on the income-generation approach needs to be supplemented with the respect and dignity of identity for the indigenous communities. Accordingly, it can be rede-

213. See Hirakuri, *supra* note 168, at 78.

signed to offer benefit-sharing as well as government-supported capacity-building to the Amazonian indigenous communities and the private landholders for complying with the forestry laws. IBAMA can play a significant role of bridging the communication between the forest-dependent communities and the private developers by introducing a procedural requirement for notification and consultation with the concerned communities.

While the system in India is functioning better than that of Brazil, improvement could be made to participatory forest governance systems in India. A firm legal basis needs to be provided to JFM by including it in a revised version of the Indian Forest Act of 1927 (Section 28 in particular), while States can use State Forest Acts for institutionalizing the JFM regime. In Brazil, the constitutional mandate under Art. 225 can be used to modify Public Forest Management Law and Forest Code to recognize PFM approaches.

The legality of JFMCs and VFCs as constitutional bodies needs to be firmly established by an act of Parliament. Instead of the Society Registration Act, like Brazil's COOPLANTAR, they can be constituted under Cooperation Societies Act to ensure maximum benefit to the communities. The present system which favors the forest department over JFMCs needs to be balanced so that both the stakeholders can be equal partners involved in JFM activities. To add to this, the land tenure rights over forest area or resources must be secured for the stakeholders for incentivizing the PFM regime in perpetuity.²¹⁴ In Brazil, private and rural landowners have the capacity to commit and participate in PFM regime since they own the stakes in the forest area. In India, legislation like FRA and PESA attempt to mainstream the land tenure rights of forest dwellers and indigenous communities.

In Brazil, an enhanced State's role in the supervision of the PFM activities can ensure equitable negotiation of terms of the contract between communities and private landholders. Government's role in PFM may vary as per the nature and design of the regime. They can ensure compatibility of the regime with existing governmental law and policy in a given area (for instance, Tribal reserves in India) and may obligate the stakeholder to participate in the regime. State may act as a "broker," buyer, or seller of the forest products in this forest-trading regime.²¹⁵

214. ROWENA MAGUIRE, GLOBAL FOREST GOVERNANCE: LEGAL CONCEPTS AND POLICY TRENDS 246-7 (2013).

215. *Id.* at 245-6.

There is a strong need for a mechanism to redress complaints arising out of PFM related disputes. Utmost importance must be given to protection of rights of village and indigenous communities. Environmental Courts and Tribunals can play a significant role in enforcing the traditional rights as well as procedural rights in market-based regimes. Judicial protection to environment and rights of communities can be successful through judicial capacity-building.

Tax incentives and credits must be diverted towards private or voluntary projects that increase economic efficiency and sustainability of already deforested areas.²¹⁶ The role of the private actor is crucial to make payments for improved forest services in developing countries. The private actors can be engaged by innovative use of Forest Stewardship Certification or under the Corporate Social Responsibility tool.²¹⁷

The ambiguity between the concurring roles of PRIs and JFM related bodies like FPCs and JFMCs should be resolved in India. Also, there is a need to synergize the functions of *Gram Sabha* and JFMCs under FRA and JFM regime in a given forest area.

There is a dire need for introduction of new technologies of silviculture like forest restoration techniques, seed collection, and using GIS for monitoring. Like in Brazil, JFMCs and indigenous communities can be trained to use digital technology for monitoring deforestation activities. Complementary training needs to be provided to village communities on reforestation and forest management with special emphasis on gender inclusion. More steps need to be taken to ensure equal representation of women in community meetings and other PFM related activities like consultation, planning, mapping, and rule-making. Women of the forest communities collect and extract forest resources for various uses, and their traditional knowledge of the species can be preserved by keeping them at the forefront of forest stewardship.

Implementation can be ensured through bodies responsible for monitoring and evaluation, like the National Institute for Space Research (INPE) and the Project Monitoring Deforestation in the Amazon (PRODES), which conducts monthly surveys and monitors deforestation respectively for dissemination of data, supports surveillance, and assists ministry for taking new measures and action plans for controlling deforestation.²¹⁸

216. See generally AMAZON FUND, ACTIVITY REPORT 2011: BASIC CONCEPTS (2011), available at http://www.amazonfund.gov.br/FundoAmazonia/export/sites/default/site_en/Galerias/Arquivos/Relatorio_Atividades/RAFA_2011_INGLES_CADERNO_1.pdf.

217. See MAGUIRE, *supra* note 186, at 244-5.

218. See AMAZON FUND, *supra* note 216.

There is a need to establish a National Forest Information System (NAFIS) where the forestry information can be collated from all jurisdictions—state, district, and *Panchayat* level—and independent forest management agencies in a uniform format for the public to access.²¹⁹ This will be an effective tool for good forest governance, especially in a market-based regime like JFM. It will ensure accountability, transparency, and public participation by providing information on goals, timelines, formation, and practical operation of the regime, reports on the forest trade, and information about investment and benefits.

Both countries need to incorporate agrarian planning as part of their functions under PFM regimes, which is the major cause for deforestation in rural regions. Procedural requirements as to consultation and decision-making in the implementation of urban sustainable infrastructural projects must be ensured by the State.

Above all, steps should be taken to enhance employment and income generation opportunities in the restoration of degraded and abandoned forest lands. This practice has the incidental benefit of encouraging changes in management and use of forest resources by the local communities.²²⁰

CONCLUSION

For proper governance of forests under international commitments, it is important to have a clear understanding of what is meant by “forest” and “sustainable forest management.” The notion of sustainable forest management is an adaptive international concept, which applies to all forest ecosystems, whether in developed or developing countries, to meet global targets.²²¹

The term “forest” is a relative term for every community, understood differently depending on local topography. In an international context, forest refers to areas with substantial tree cover in “any given geographical range and with any species structure.”²²²

Sustainable forest management is certainly a contentious concept, especially in the wake of a transitioning ecological and economic understanding of the world. Historically, forest management has been a cause of friction between the dominant authority and the dominated

219. S.P.S. Kushwaha, *Remote Sensing and GIS for Forest Management*, ENVIRONews (Oct. 2012), <http://isebindia.com/09-12/12-10-01.html>.

220. F.R.A. § 2(a).

221. See AMAZON FUND, *supra* note 216, at 4.

222. See *id.*

public, with both asserting their absolute rights over the forest resources. Since the Rio Earth Summit, it has been a subject of global concern, yet still failing to generate a worldwide formal agreement. Instead of resulting in international collaborations, it has created a political and economic divide between developing and developed countries.

PFM is a sub-concept under the wider umbrella of SFM regime. It has the potential to eliminate socio-political conflict regarding resource management and the sustainable use of forests. Agenda 21²²³ advocates the rights indigenous communities have on their lands and foresees their financial growth capacity eventually resulting in an effective forest stewardship.²²⁴ This can go a long way in building sustainable forest ecosystems in developing countries in spite of the global demand for forest products. However, according to the U.N. Department for Economic and Social Affairs, recognition of the indigenous rights over forests has been a relatively ignored subject globally while communities continue to press governments for legal recognition of their traditional land rights.²²⁵ It is important to develop location-specific and community-specific PFM regimes to meet the needs of locals.²²⁶ Any development project in the forests must involve proper consultation process with locals and attain their “free, prior and informed consent” before proceeding.²²⁷ Steps should be taken to incorporate the traditional knowledge of the communities especially in the demarcation of PFM area and developing suitable harvesting practices.²²⁸ Tribes have proved to be effective in monitoring illegal logging activity in and around their traditional forest land. For example, Google is helping the Paiter-Surui tribe in Brazil to use Google Earth to monitor and map the forests for sustainable management.²²⁹

From the analysis of the PFM regimes in India and Brazil, it is evident that transparency and accountability play a significant role in the effective collaborative implementation of tasks between communities and the government. India is ranked 94th out of 174 countries in

223. See Earth Summit, *supra* note 2, at Principle 22.

224. See Moran, *supra* note 173, at 405.

225. *Indigenous Activist Fights to Save his Tribe and the Amazon Rainforest*, UN NEWS CENTRE (Apr. 16, 2013), <http://www.un.org/apps/news/story.asp?NewsID=44666#.VQsFRYr3anN>.

226. See *Evolution of Forest Policies*, *supra* note 63, at 9.

227. See UN NEWS CENTRE, *supra* note 225.

228. See *Evolution of Forest Policies*, *supra* note 63, at 9 (citing DEEP NARAYAN PANDEY, *BEYOND VANISHING WOODS: PARTICIPATORY SURVIVAL OPTIONS FOR WILDLIFE, FORESTS, AND PEOPLE* (1996)).

229. See UN NEWS CENTRE, *supra* note 225.

the corruption perception index (CPI) 2012, and their corruption perception index score of 36 (the lower the score, the higher the corruption) indicates it as a major contributor to the economic and social growth impediment.²³⁰ Brazil, on the other hand, is ranked 69th with a CPI score of 43. The index clearly reveals that both the countries are suffering from serious corruption problems which translate directly in the forestry sector.

A national monitoring and evaluation body should be assigned the task of evaluating the progress of community based forestry programs. The information on challenges faced and successful implementation stories may be shared through a clearinghouse mechanism using the MoEF website. The forest fringe communities should be involved in the monitoring and planning processes. Their presence in the planning, development, and adoption of management and extraction practices can make adapting to new practices less contentious if they are themselves monitoring the results. For the success of such a local, adaptive participatory forest management approach, a simplified set of indicators must be developed for communities.²³¹

Additionally, it is highly recommended to support PFM regime with a robust legal instrument like an enabling forest conservation act. The institutions established under the regime must have clear roles and responsibilities. Having coherent administrative procedures is a good way to avoid misuse of power while preventing institutions or officials from reneging on their duties. Such procedures should lay down the consequences for nonperformance of duties, thereby giving the regime some teeth. The success of PFM largely depends upon the active interest of the local community in the welfare of their forests. Thus, it is pertinent for the forest department to take necessary steps to keep the community well-informed and involve them in all planning and management decisions.

The use of market based incentives is a promising strategy to encourage better protection of forests. Even though sustenance of forests is crucial to communities, the short term gains from exploitation may create a barrier in the afforestation goals of a developing country. Financial incentives in the form of baseline rewards, for communities acting as custodian of the forests, would ward off the scope for such short-lived monetary benefits.

230. *Corruption Perceptions Index 2012*, TRANSPARENCY INT'L, <http://www.transparency.org/cpi2012/results> (last visited Sept. 5, 2014).

231. See *Evolution of Forest Policies*, *supra* note 63, at 9.

Lastly, PFM is a contractual agreement which enables the shift of authority from the government into the hands of the communities, households, and individuals. It does so by institutionalizing the collaborated efforts of people, as well as guidance by the governmental departments. The role of the judiciary as the final arbiter of justice when there is an institutional or procedural default is equally relevant to such collaborations. It can lend seriousness of efforts to the PFM regime, which gets diluted in the micro-managing of large portions of forests.

In the end, the PFM mechanism signifies a different tool for different people in different locations. In the words of Jeffery Campbell:

Forester may view JFM primarily as a means to ensure forest regeneration; community members may see it as . . . a means to ensure daily requirements of food, fodder and NTFPs, and/or a way to increase incomes; NGO workers/activists may view the program as a vehicle for grass roots empowerment; [for] academic researcher . . . an experiment in collective action; while politicians may view JFM as a means to decentralize control over resources. It is a dynamic initiative still very much in its evolutionary stage²³²

232. See Upadhyay, *supra* note 68, at 2 (quoting Jeffrey Y. Campbell, Second Generation Issues in JFM: Introduction to Panel Presentation (May 14, 1996)).
